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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/064,447	07/15/2002	Timo Schirmer	GEMS0151PUS	5784

27256 7590 10/15/2003

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EXAMINER

SHRIVASTAV, BRIJ B

ART UNIT	PAPER NUMBER
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2859

DATE MAILED: 10/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/064,447

Applicant(s)

SCHIRMER, TIMO

Examiner

Brij B Shrivastav

Art Unit

2859

The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 July 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 5-20 is/are rejected.
- 7) ☒ Claim(s) 2-4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1, 5-12, and 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sussman et al (Pub. No. US 2003/0088174 A1), and further in view of Macovski et al (IEEE Transactions on Medical Imaging Vol. MI-2 NO. 3, Sept. 1983).

As regards to claims 1 and 19, Sussman et al teach a method to receive a real time image from a magnetic resonance imaging system (figure 1; page 1, column 2, lines 20-34) to calculate signal-to-noise ratio based upon said real time image (page 1, column 2, lines 4-18). Sussman et al also teach communication system through use of media device (page 2, lines 11-15; figure 1, numerals 100, 107). Sussman et al do not teach relative SNR variant based upon said acquired signal-to-noise ratio. Macovski et al teach relative SNR variant based upon said acquired signal-to-noise ratio (pages 122, 123, see Description section). Further, regarding to claims 5-12 and 20, Sussman et al in combination of Macovski et al meet the limitations of these claims.

It would have been obvious to one of ordinary skill in the art to combine Macovski et al's teachings of relative SNR variant based upon said acquired signal-to-noise ratio with the teachings of Sussman et al to improve spatial resolution improving image quality.

2. Claims 13-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sussman et al (Pub. No. US 2003/0088174 A1), in view of Macovski et al (IEEE Transactions on Medical Imaging Vol. MI-2 NO. 3, Sept. 1983), and further in view of Lampotang et al (US 6,597,939).

As regards to claim 13, Sussman et al teach a method to receive a plurality of real time images from a magnetic resonance imaging system (figure 1; page 1, column 2, lines 20-34) to calculate signal-to-noise ratio based upon each of said real time images, and calculate reference signal-to-noise ratio (page 1, column 2, lines 4-18). Sussman et al do not teach relative SNR variant, and also do not teach a communication system using audio feedback device. Macovski et al teach reference SNR and relative SNR variant based upon said acquired signal-to-noise ratio (pages 122, 123, see Description section). Lampotang et al teach a communication system with audio feedback device (column 11 and 12, lines 63-67 and 1-12). Further, regarding to claims 14-18, Sussman et al in combination of Macovski et al and Lampotang et al meet the limitations of these claims.

It would have been obvious to one of ordinary skill in the art to combine Macovski et al's teachings of relative SNR variant based upon said acquired signal-to-noise ratio and Lampotang et al's teachings of audio feedback system with the teachings of Sussman et al to improve spatial resolution improving image quality.

3. Claims 2-4 are objected to as being dependent upon a rejected claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

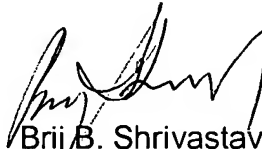
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4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brij B Shrivastav whose telephone number is 703-305-0649. The examiner can normally be reached on 7 AM to 4 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego F. F. Gutierrez can be reached on 703-308-3875. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-304-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-0956.

Bbs
30 September 2003



Brij B. Shrivastav
Patent Examiner